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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,530	10/27/2003	Erling Jim Andersen	23202	6412

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EXAMINER	
WARTALOWICZ, PAUL A	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,530	ANDERSEN, ERLING JIM	
	Examiner	Art Unit	
	Paul A. Wartalowicz	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) *3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-7* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/620,250.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1, 2, and 4-7, drawn to a method, classified in class 423, subclass 658.2.

II. Claim 3, drawn to an apparatus, classified in class 422, subclass 234.

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus such as one without means for transporting said second portion of aluminum derivative to said first location and forming aluminum metal therewith.

During a telephone conversation with Mario Theriault on December 16, 2005 a provisional election was made without traverse to prosecute the invention of the process, claims 1, 2, and 4-7. Affirmation of this election must be made by applicant in replying to this Office action. Claim 3 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Stockburger et al. ("On-line Hydrogen Generation from Aluminum in an Alkaline Solution". Proc.-Electrochem. Soc. (1992), 92-5(Proc. Symp. Hydrogen Storage Mater., Batteries, Electrochem., 1991), 431-44, 1992, XP-001032928).

Stockburger et al. teach a method for carrying energy from one location to another (mobile fuel source, page 432, lines 36-38) comprising obtaining aluminum metal from a first location (shredded can scrap and chopped aluminum wire, page 434, lines 3-6), reacting said aluminum metal with water and sodium hydroxide in a catalytic

reaction, thereby splitting said water into hydrogen, oxygen and forming aluminum hydroxide (page 434, lines 32-41) wherein aluminum hydroxide can be 100% recycled back to aluminum (page 432, lines 33-36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stockburger et al. ("On-line Hydrogen Generation from Aluminum in an Alkaline Solution". Proc.-Electrochem. Soc. (1992), 92-5(Proc. Symp. Hydrogen Storage Mater., Batteries, Electrochem., 1991), 431-44, 1992, XP-001032928).

Stockburger et al. teach a method for carrying energy from one location to another (mobile fuel source, page 432, lines 36-38) comprising obtaining aluminum

metal from a first location (shredded can scrap and chopped aluminum wire, page 434, lines 3-6), reacting said aluminum metal with water and sodium hydroxide in a catalytic reaction, thereby splitting said water into hydrogen, oxygen and forming aluminum hydroxide (page 434, lines 32-41) wherein the process is a potential fuel source for a H_2/O_2 fuel cell (page 432, lines 37-40). Stockburger et al. also teach that the aluminum hydroxide formed from said process for carrying energy from one location to another can be 100% recycled back to aluminum (page 432, lines 33-36). Stockburger et al. fail to teach using the recycled aluminum formed from aluminum hydroxide used in said process for carrying energy from one location to another.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide for the recycle of the aluminum formed from aluminum hydroxide (page 432, lines 33-36) in the reaction of aluminum in an alkaline solution (for the production of hydrogen, oxygen, and aluminum hydroxide, page 434, lines 32-40) because it is known to recycle materials such that the environmental impact of hydrogen generation is minimal (page 432, lines 22-25) as taught by Stockburger et al. The teaching of Stockburger et al. meets the limitation of using subsequent portion aluminum derivative, repeating said steps of forming, reacting, and converting.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen et al. (U.S. 6506360).

Andersen et al. teach a method for carrying energy from one location to another (remote locations where electricity is not available, col. 2, lines 55-59) comprising obtaining aluminum metal from a first location (aluminum foil, col. 3, lines 63-64), reacting said aluminum metal with water and sodium hydroxide in a catalytic reaction (col. 3, lines 50-60), thereby splitting said water into hydrogen, oxygen and forming alumina (col. 4, lines 15-25) and wherein hydrogen generators are known for use with fuel cells (col. 1, lines 19-22). Andersen et al. also teach that the aluminum hydroxide or alumina formed from said process (col. 5, lines 63-67) for carrying energy from one location to another can be recycled back to aluminum (col. 5, lines 65-67). Andersen et al. fail to teach using the recycled aluminum formed from aluminum hydroxide in said process for carrying energy from one location to another.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide for the recycle of the aluminum formed from aluminum hydroxide or alumina (col. 5, lines 63-67) in the reaction of aluminum in a catalytic reaction (for the production of hydrogen wherein sodium hydroxide is the catalyst, col. 3, lines 50-55) because it is known to promote recycling and energy conservation (col. 2, lines 59-62) as taught by Andersen et al. (U.S. 6506360). The teaching of Andersen et al. meets the limitation of using subsequent portion aluminum derivative, repeating said steps of forming, reacting, and converting.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stockburger et al. ("On-line Hydrogen Generation from Aluminum in an Alkaline Solution". Proc.-Electrochem. Soc. (1992), 92-5(Proc. Symp. Hydrogen Storage Mater., Batteries, Electrochem., 1991), 431-44, 1992, XP-001032928) in view of Muller et al. (U.S. 4193978).

Stockburger et al. teach a method for carrying energy from one location to another as described in claim 4. Stockburger et al. fail to teach wherein said step of converting is carried out in an internal combustion engine.

Muller et al., however, teach a process for production of hydrogen (col. 1, lines 4-6) wherein hydrogen may be used as fuel for internal combustion engines in place of hydrocarbons (col. 1, lines 15-16) for the purpose of eliminating atmospheric pollution (col. 1, lines 16-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide hydrogen used as fuel for internal combustion engines in place of hydrocarbons (col. 1, lines 15-16) in Stockburger et al. in order to eliminate atmospheric pollution through the formation of carbon oxides or of sulfur upon combustion of the hydrocarbons (col. 1, lines 16-19) as taught by Muller et al.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen et al. (U.S. 6506360) in view of Muller et al. (U.S. 4193978).

Andersen et al. teach a method for carrying energy from one location to another as described in claim 4. Andersen et al., however, fail to teach wherein said step of converting is carried out in an internal combustion engine.

Muller et al., however, teach a process for production of hydrogen (col. 1, lines 4-6) wherein hydrogen may be used as fuel for internal combustion engines in place of hydrocarbons (col. 1, lines 15-16) for the purpose of eliminating atmospheric pollution (col. 1, lines 16-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide hydrogen used as fuel for internal combustion engines in place of hydrocarbons (col. 1, lines 15-16) in Andersen et al. in order to eliminate atmospheric pollution through the formation of carbon oxides or of sulfur upon combustion of the hydrocarbons (col. 1, lines 16-19) as taught by Muller et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Wartalowicz
January 4, 2006

COLLEEN P. COOKE
PRIMARY EXAMINER